

# *BELL WORK*

## *10-Feb-2015*

1. Name two substances that are in the gas phase at room temperature
2. What is one thing that you know about gases?
3. What is one thing you would be curious to know about gases?

# *Agenda*

Review Test Questions

Computer simulation



# *Objective*

To explore how gases are affected by different variables using a computer simulation

# *Computer simulation*

- Launch the simulation

- URL:

- <http://phet.colorado.edu/en/simulation/gas-properties>

-OR-

- Google: “gas law PhET simulation”

*Before you receive your worksheet show me...*

That you can...

1. Add both heavy and light gases to the container
2. Adjust the temperature of the container while holding the pressure constant
3. Decrease the volume of the container

# *Exit slips:*

On your piece of paper from Bellwork:

- Re-draw your balloons with any corrections you would like to make
- Explain why you made these changes
- If no changes were made:
  - What was one interesting thing you learned from the computer simulation?

# *BELL WORK*

*11-Feb-2015*

**Draw three different balloons with air particles in them**

1. One full of gas at room temperature
  2. One full of gas at 0 degrees Celsius (~32 degrees Fahrenheit)
  3. One full of gas at 50 degrees Celsius (~122 degrees Fahrenheit)
- **Using dots show where the particles are located inside each of the balloons**
  - **Use arrows on the particles to indicate how fast they are moving (longer arrow = faster)**
  - **rank the balloons from lowest to highest pressure**

# *Agenda*

Notes – Gas properties and the KMT

Activity Stations – explaining every day events

## *Objective(s)*

To identify the properties of gases

To explain properties of gases using the kinetic molecular theory

To explain real world phenomena using the kinetic molecular theory and the properties of gases

# *Demo*

Write on your bellwork what you predict is going to happen

Write down what you actually observed



# *Properties of Gases*

1. Gases assume the volume and shape of their containers.
2. **Gases are the most compressible state of matter.**
3. Gases will mix evenly and completely when confined to the same container.
4. **Gases have much lower densities than liquids and solids.**

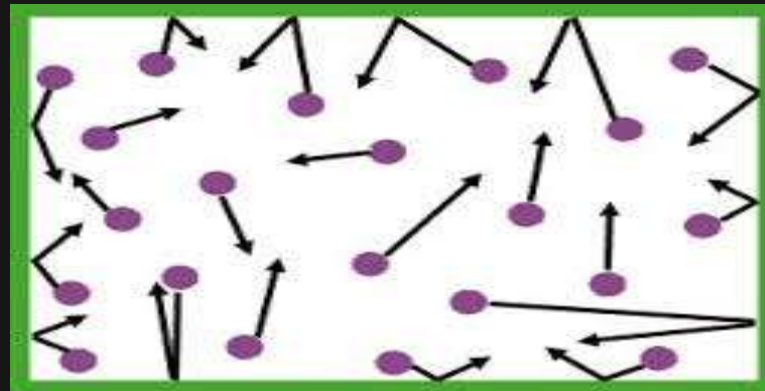
# *Kinetic Molecular Theory (KMT)*

Used to explain the behavior  
of gases



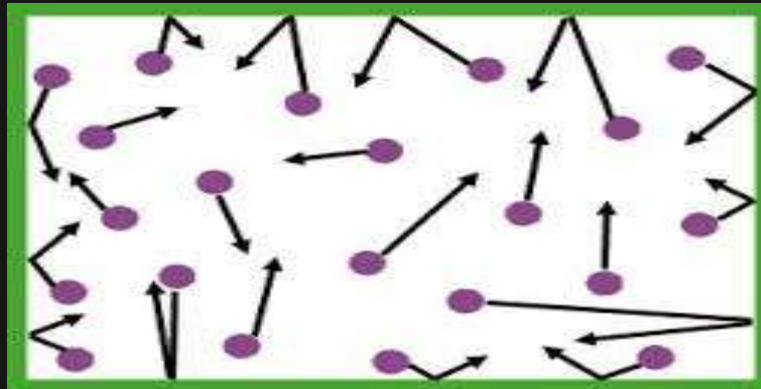
# *Kinetic Molecular Theory (KMT)*

1. Gases are composed of particles moving in constant, random motion
2. Particles in a gas move in a straight line until colliding with another particle
3. The space between gas particles is much greater than that of solids or liquids



# *Kinetic Molecular Theory (KMT)*

4. The attraction between gas particles is negligible
5. Energy is conserved when particles of a gas collide
6. The average kinetic energy of a collection of gas particles depends on the temperature of the gas



# *ACTIVITY!*

- Two (2) sets of eight stations
- Two (2) people per station at a time
- One (1) prompt per station
- Three (3) minutes per prompt
- Individual answer sheets on a separate piece of paper

# *ACTIVITY!*

**For each situation explain:**

- 1. What gas properties are being observed (use your notes)**
- 2. How do you explain these properties using the KMT (use your notes)**
- 3. Give another example in which you observe the same situation**

# *Exit Slip*